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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,313	02/09/2001	Sujoy D. Guha	6130 PA01	6705

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EXAMINER
SONG, HOON K

ART UNIT	PAPER NUMBER
2882	

DATE MAILED: 06/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Applicati n No.	Applicant(s)	
	09/780,313	GUHA ET AL.	
	Examiner	Art Unit	
	Hoon K Song	2882	

-- The MAILING DATE of this communication appears on the c ver she t with the c rrespondenc address --

Peri d for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-9 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-9 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 09 February 2001 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Pri rity under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Bilhorn et al. (US 5696591).

Regarding claim 1, Bilhorn teaches a system for web inspection of a web, the system comprising:

a plurality of smart cameras (figure 1), each smart camera for detecting a plurality of web flaws from a streaming video signal, each smart camera having means for generating flaw image data and flaw location data (figure 2);

a host computer (16) for controlling the low contrast web inspection system and for accepting and displaying the flaw image data and the flaw location data; and

an Ethernet (22) for connecting the plurality of smart cameras to the host computer.

Regarding claim 2, Bilhorn teaches that the each smart camera of the plurality of smart cameras comprises:

a line scan camera for generating a pixel representation of a portion of the web (column 3 line 37+);

a lighting uniformity and pixel sensitivity correction means for correcting each pixel of the pixel representation and for providing a corrected pixel representation (column 6 line 48+);

a web edge detector for detecting at least one edge of the web (column 7 line 33+);

a multi-pipeline pre-processor (12) for filtering the corrected pixel representation, the multi-pipeline preprocessor generating a prioritized data stream of potential flaws;

a run length encoder for generating location data regarding a location of each group of the potential flaws in a cross direction (admitted prior art, figure 1);

a blob detector (20) for generating block data regarding the location of blocks of the potential flaws along a machine direction; and

an inspect/reject analyzer (16) for determining actual flaw data from the prioritized data stream of potential flaws.

Regarding claim 3, Bilhorn teaches that the multi-pipeline processor comprises:

a plurality of filters for averaging the corrected pixel representation over a distance of the web along a machine direction of the web; a plurality of adaptive background subtraction channels connected to the plurality of filters (column 3 line 63+);

a plurality of thresholders, each thresholder of the plurality of thresholders connected to an output of an adaptive background subtraction channel of the plurality of adaptive background subtraction channels, each thresholder for grouping a subtracted pixel representations (column 5 line 52+); and

a priority logic circuit (34) for prioritizing the outputs of each of the plurality of thresholders (column 5 line 52+).

Regarding claim 6, Bilhorn teaches that each smart camera of the plurality of smart cameras detects the plurality of web flaws from the streaming video signal at a contrast approaching a signal noise level (column 3 line 29+).

Regarding claim 7, Bilhorn teaches a method for low contrast web inspection of a web, the method comprising the steps of:

providing at least on smart camera (figure 2) for inspecting at least a portion of the web;

generating flaw image data and flaw location data (column 3 line 5+);

transmitting the flaw image data and flaw location data over an Ethernet (column 3 line 5+);

displaying the flaw image data and flaw location data (column 3 line 5+).

Regarding claim 8, Bilhorn teaches that the step of generating flaw image data and flaw location data comprises the steps of:

generating a pixel representation of a portion of the web;

correcting the pixel representation for a lighting uniformity and a pixel sensitivity;

filtering the corrected pixel representation utilizing a plurality of filters;

grouping the filtered corrected pixel representations to generate a plurality of potential flaw data streams;

generating a prioritized data stream from the plurality of potential flaw data streams;

generating cross direction location data regarding a location of the prioritized data stream;

generating block data regarding the location of blocks of the prioritized data stream along a machine direction; and

determining actual flaw data from the prioritized data stream of potential flaws utilizing the cross direction location data and the block data.

Regarding claim 9, Bilhorn teaches a method for generating a prioritized image data stream from a digitized video stream of a web, the method comprising the steps:

averaging the digitized video stream over a distance of the web to generate an averaged background signal (column 3 line 56+);

averaging the digitized video stream over a distance of the web along a machine direction of the web to generate a filtered machine direction signal (column 3 line 56+);

averaging the digitized video stream over a distance of the web along a cross direction of the web to generate a filtered cross direction signal (column 3 line 56+);

subtracting the averaged background signal from the filtered machine direction signal to generate a first pixel representation (column 7 line 20+);

subtracting the averaged background signal from the filtered cross direction signal to generate a second pixel representation (column 7 line 20+);

grouping the first and second pixel representations to generate at least two data streams of potential flaws (column 6 line 48+); and

prioritizing the at least two data streams of potential flaws to generate the prioritized image data stream (column 6 line 48+).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bilhorn in view of Jarrett, Jr. (US 5068799)

Bilhorn fails to teach a detail of filters and thresholders

Jarrett teaches the plurality of filters and thresholders used in flaw detection system.

In view of Jarrett, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to adopt the known additional filters and thresholders in order to detect flaws in the material which are undetectable by conventional detection processes (column 2 line 53+). Accordingly, one would be motivated to adopt the known filters and thresholders because it would reduce a signal to noise problem and would detect flaws which are normally not easily detected (column 2 line 28+).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoon K Song whose telephone number is 703-308-2736. The examiner can normally be reached on 8:30 AM - 5 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on 703-305-3492. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-4858 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

ROBERT H. KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Hoon K. Song
June 13, 2002